



Reducing Antibiotic Use Through On-Farm Culture & Selective Treatment Of Clinical Mastitis

Context

Mastitis in dairy cows is common across the UK. It is an inflammation of the udder, usually caused by microorganism (bacterial) infections, and is the most common reason for administering antibiotics to dairy cows. There two main groups of bacteria which cause mastitis: gram-positive and gram-negative bacteria.

Conventional advice in the UK is to treat every case of mastitis with an antimicrobial / antibiotic, to cure both the symptoms of the condition and the infection itself. However, some mastitis-causing organisms, mainly the gram negative bacteria, have high spontaneous cure rates. In these cases antibiotics may not help cure the mastitis.

Farmers who are keen to reduce antimicrobial use in their herds, are looking to more selective antibiotic treatment: where they can test on farm which type of bacteria is causing the infection, and only treat certain types which are known not to spontaneously cure themselves (e.g. gram-positive bacteria types). However, there is limited data monitoring the success of selective treatment and longterm health of the cows being left to spontaneously cure.

This field lab investigates the efficacy of this on-farm testing and selective treatment using one particular test kit.



The field lab group meet to discuss the trials.

Trial Design

- On three farms, farmers split their dairy herds in two. In group one cows with mild and moderate mastitis were treated conventionally with antimicrobials. In group two the farmer used the testing kit MastDecide™ to identify the bacteria causing the infections, and only treated the gram-positive cases.
- The cure rates and symptoms of the two, differently treated groups were compared. The trialists also submitted the milk samples from the on farm culture to a laboratory to check how accurate the MastDecide™ test was at identifying the different bacterias.



Findings

- On two of the farms there was no significant difference between the recovery rates of the two different groups.
- Cell counts returned to a satisfactory level after a 14-42 day window in about two thirds of the cases, in both the first group which was blanket treated, and the selective treatment group.
- Recurrence rates in the same lactation were very similar in both groups.
- The average survival times after a mastitis case were not statistically different.
- In general the laboratory agreed with the on-farm test in identifying the type of bacteria involved, though not always, it is thought because of the increase level of sensitivity of the lab test.

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